

PATENT SPECIFICATION



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COMPLETE SPECIFICATION.

An Improved Composition for Removing Rust from, and Cleansing, Steel and Iron.

We, HEINRICH SIEGEL, of Markgrafen-
strasse 33, Berlin, W., Germany, of Ger-
man nationality, and ERICH PODDER, of
Sangerstrasse 6, Reval, Esthonia, of
5 Esthonian nationality, do hereby declare
the nature of this invention and in what
manner the same is to be performed, to
be particularly described and ascertained
in and by the following statement:—
10 Petroleum and benzene have been used
heretofore, either individually or as a
mixture, for removing rust from, and
cleansing, steel and iron parts of
machines, motors, automobiles, tools and
15 the like. The present high price of these
agents, however, practically prohibits
their use. In addition to these, so-called
chemical rust-removing agents are also
known which, however, apart even from
20 their high price, have the objectionable
property that they adhere firmly to the
skin of the operator. For this reason the
hands, when working with these known
chemical rust-removers, must be pro-
25 tected by leather gloves. Also the storage
of the known rust-removers and
cleaners requires particular precautionary
measures as they easily eat through and
destroy the usual containers and vessels.
30 Rust removal and cleansing by the
employment of heavy oils is also known,
while for cleansing and disinfecting pur-
poses, a mixture of sodium carbonate and
potassium permanganate has been pro-
35 posed.
The present invention relates to the
manufacture of rust-removing agents
which, with a slight alteration in their
composition, may be used equally well as
40 cleansers. The constituents used in
carrying out the manufacture are cheaper
than those heretofore used and do not
affect the operator, neither do they affect
the article being treated more than is
45 absolutely necessary for the removal of
the rust and dirt. It is to be particu-

larly noted that the storage and employ-
ment of the material, which is also fire-
proof, is simple and convenient by reason
of its crystalline condition.

The rust remover, as made under this
invention, consists of a mixture of
caustic soda, soda crystals and potassium
manganate or potassium permanganate.
The chemicals are mixed together and
55 kept in a dry state until required for use
when they are mixed with water where-
upon a chemical reaction is set up which
produces a liquid capable of easily and
quickly removing rust.

The following proportions, which have
been found in practice to be very effective
for removing rust, are given by way of
example:—

750 gms. caustic soda,	65
875 gms. soda crystals,	
10 gms. potassium manganate or	
potassium permanganate.	
12 litres water.	

Small articles from which rust is to be
removed, are dipped into the solution
and after several minutes soaking are
rubbed over with a rag. Larger articles
are brushed over with the solution, i.e.
they are covered with a film or layer of
75 the solution and are then, after some
minutes soaking, rubbed over with a rag
in the same manner.

If it is desired to cleanse whole
machines, machine parts or other steel or
80 iron articles, from dirt, oil, colours, or
smoke, the composition of the solution is
altered slightly by the addition of a small
proportion of glycerine which may be
introduced into the liquid but is prefer-
ably added to the dry crystals. The rust-
removing properties of the mixture
remain unchanged even with this
addition.

For cleansing, that is, when the
90 removal of rust is less essential than the

[Price 1/-]

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cleansing itself, the following proportions, which are given by way of example, are found to be effective in practice:—

- 5 $\frac{1}{4}$ kg. caustic soda,
 $\frac{1}{4}$ kg. soda crystals,
 $\frac{1}{8}$ kg. glycerin,
 16 gms. potassium manganate or potassium permanganate,
 120 litres water.

- 10 The glycerine on account of its relatively small quantity, is absorbed by the other crystalline materials and is not particularly noticeable when the composition is dissolved in hot water. The cleansing
 15 composition dissolves easily in warm or hot water which may be added, as indicated by the foregoing example, in large quantities, the articles to be cleansed being dipped into or washed in the solution.
 20

- Although definite proportions of water are given above, the powerful combination of crystals may be dissolved to any desired amount in warm water, the article
 25 to be operated on being brushed over with, or dipped into the solution. After a few minutes, the rust present is loosened without any injury whatsoever to the underlying skin or surface of the
 30 iron or steel body. The article is then simply mopped with a rag and, in consequence, retains a thin protecting film of the liquid which ensures protection against renewal of the rust for several
 35 weeks.

Both the above mentioned compositions are absolutely harmless to the operator

and to the article being cleansed; they are convenient to store in dry form; are cheaper to manufacture than the heretofore known rust-removing and cleansing agents; and it has been found that they are far superior in effect. 40

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:— 45

1. A composition for removing rust from steel and iron consisting of caustic soda, soda crystals, potassium manganate or potassium permanganate, and water. 50

2. A composition for removing rust from, and also cleansing steel and iron consisting of caustic soda, soda crystals, potassium manganate or potassium permanganate and water, with the addition of glycerine. 55

3. A composition for removing rust from steel and iron as claimed in Claim 1, the ingredients being mixed together substantially in the proportions hereinbefore set forth. 60

4. A composition for removing rust from, and also cleansing steel and iron as claimed in Claim 2, the ingredients being mixed together substantially in the proportions hereinbefore set forth. 65

Dated the 29th day of October, 1923.

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